

# Value Co-creation Mechanism in Software Product Innovation: a Case Study of Seeyon Internet Company

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**Abstract**—Software product innovation is increasingly emphasizing the importance of users' participation. But most of the literature regards users as followers of software suppliers. It is rarely discussed in the context of users having the ability to provide and promote information products and services. The paper used the case study method to summarize the product innovation process of Seeyon Internet Company and analyze the value creation mechanism. The paper found that the value creation in the two stages of platform tool support and using, maintenance and feedback followed the service-dominant logic, while in the two stages of self-building system and improvement, releasing and promotion followed the user-dominant logic. The theoretical contribution of the research was to propose a value co-creation process and to clarify the new roles and value creation mechanism of users and suppliers. The management significance of the research was to provide a new perspective for the information system enterprises to practice the product innovation model.

**Keywords**—*product innovation; value co-creation; service-dominant logic; user-dominant logic; Seeyon Internet*

## I. INTRODUCTION

The software industry is a national strategic emerging industry. Among them, enterprise management software is an important basis for enterprises to carry out information construction and improve enterprise management efficiency. For information system suppliers, how to carry out product innovation is the best choice to enhance the competitiveness of enterprises [1]. Information management software suppliers transform users' needs into software products through a certain R&D process and push the products to end users. Software products can only show their value in the using of end-users. Therefore, the process of software product innovation is also the process of co-creating value between suppliers and users [2].

The traditional product innovation process relies heavily on the suppliers' own R&D department for product research and development. As market demand changes, system suppliers are increasingly aware that users play an important role in product innovation. With the popularization of cloud computing technology, the technical barriers of users building systems have been eliminated, and the role of participants in value creation has become diversified and dynamic. Users can enjoy service resources and also have the ability to become providers of service resources; enterprises are no longer always the dominant players in the service, but become supporters of services [3]. This product innovation model is a fundamental change to the traditional product innovation model.

However, the literature on the role of users and suppliers in the field of information management advocates that users participate in the product development or value creation process fully [4], which is still treating the user as a recipient of the service. The paper uses case study to show a product innovation model in which users build and promote software products. And to discuss the value creation mechanism of software suppliers, benchmark users, and ordinary users in this situation. The article expands the theory of value creation in the field of information management. In the process of practice, it can also guide system suppliers to make strategic changes under the new value creation model to support the process of user value creation.

## II. LITERATURE REVIEW

### A. Software Products Innovation

Product innovation is the process of developing one or several new ideas into actual product development and application. It is a dynamic system operation process in which a series of activities are carried out interactively and feedback continuously. Information management software

companies are knowledge-intensive enterprises that provide high-quality products and services [5].

Most of the traditional software development processes follow the unified process framework from the perspective of software suppliers or consulting firms [6]. The R&D implementation process begins with the identification of content and objectives. Suppliers need to structure users' needs and consider what products or solutions are available to meet users' needs [7]. Usually users have limited knowledge of their needs, or lack the necessary knowledge and skills to express their needs to suppliers clearly, which requires relying on suppliers to diagnose problems [8]. On the one hand, the years of expertise and experience of suppliers in system development and implementation exacerbate their information asymmetry with users and strengthen the dominant position of suppliers in the product innovation process. On the other hand, most of the users' industry knowledge and wisdom are largely underutilized. The complexity and information asymmetry of knowledge-intensive services pose challenges to the value created by suppliers and users [9]. And it is difficult for users to assess the potential value of the system delivered by the supplier.

### *B. Value Co-creation*

The theory of value co-creation can be traced back to the 19th century, and it is discussed in the literature of service economics [10]. With regard to the ways and means of value creation, different dominant logics have different viewpoints. From the perspective of relevant literature, they have experienced three stages: product-dominant logic, service-dominant logic and user-dominant logic.

In the product-dominant logic, the supplier is responsible for manufacturing and distributing the product, and the customer is only the passive recipient of the product. Value comes from the process of the enterprises' production and realizes through the process of product exchange with consumers [11].

With the rise of the service economy, the theory of service-dominant (S-D) logic has made the academic community take a step further in the study of value co-creation [11]. The core ideas of SD Logic are: (1) Value creation takes place in the daily consumption process of customers, defined by customers and created jointly by enterprises and customers; (2) Service-dominant means that enterprises must develop and coordinate resources for customers. At the same time, they should provide the necessary knowledge and skills to help customers create value in products using [12].

In a research on the participants' role and process of the service-dominant logic, [11] pointed out that the supplier is a value creator, and the customer is incorporated into the enterprise-centric value creation network as a value co-creator. At this point, companies are no longer centered on exchange value, but focus on value in customers' using. [13] Further emphasizes the consumers' dominant position, arguing that suppliers are only value promoters who propose value propositions, while consumers are true value creators.

Although the service-dominant logic emphasizes the importance of customers in the value creation process and the interaction between customers and suppliers, the focus is still on supplier-dominant output and interaction [14]. The user-dominant logic proposed by [15] is to place customers in the dominant position of value creation. In the user-dominant logic, the user is the true creator of value, and the value is generated by the user's daily life practice, resulting from a variety of identifiable or unrecognizable customer living spaces. In this process, customers are no longer limited to resources controlled by the enterprise. Customers themselves create value for themselves. Suppliers only exist as partners, aiming at how customers use products or services to achieve their own goals [16].

## III. RESEARCH METHOD

In the process of software development and information consultation, Seeyon Internet Company has innovatively explored a "Fengtuoke" product innovation model. This model takes industry benchmark users (called Fengtuoke) as the mainstay of application development and promotion. The paper takes Seeyon Company, Fengtuoke users and ordinary users as interviewees, adopting a case study to analyze the product innovation process of "Fengtuoke" model and the value co-creation process of users and suppliers.

### *A. Case Study Object*

Seeyon Internet Software Company (hereinafter referred to as Seeyon Company) was established in Beijing China in 2002. It is a full solution supplier that provides collaborative management systems, solutions and cloud services to organization-level customers.

Seeyon Company's Formtalk cloud platform, with its special "PaaS+SaaS" product form, is committed to building a platform that can set up cloud business for enterprise users flexibly. For different stages of the enterprises' development, the Formtalk cloud platform can provide different application construction methods. For example, for the early stage of the company, Formtalk provides high frequency applications. When the enterprise enters the high-speed development stage, the Formtalk can support the free construction of the enterprise business application, and support expansion the application process flexibly. For large-scale enterprises that already have professional IT capabilities, Formtalk also provides a number of application design controls to provide IT staff with better business implementation tools.

It is the flexible customization features of the Formtalk cloud platform that the benchmarking users with development capabilities and certain influence in their own industry are transformed into Fengtuoke. Platform tools are provided by Formtalk, and Fengtuoke users give full play to its industry expertise to build software products or solutions for vertical industries or specific scenarios. At the same time, Formtalk cloud platform supports Fengtuoke to upload its application to the Formtalk sharing platform for display. Fengtuoke's users or peers (called ordinary users) can go to the Formtalk sharing platform to purchase business

applications, and Fengtuoke can also provide consulting services and after-sales services to paying customers through offline. This is a new model that is different from traditional software product innovation. The “Fengtuoke” mode supported by the Formtalk cloud platform is shown in “Fig. 1”.

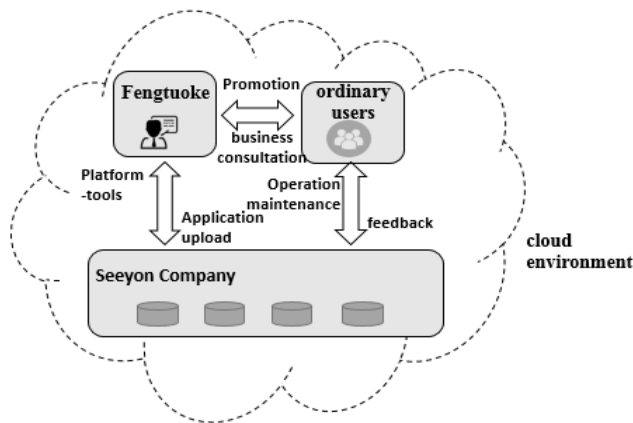


Fig. 1. “Fengtuoke” mode of Seeyon Company.

### B. Data Collection

Data collection methods include first-hand data collection and second-hand data collection. In order to improve the reliability and validity of the case study, the triangulation method is used to obtain relevant data through various ways to ensure the persuasion of the research conclusion [17].

The first-hand data acquisition methods are mainly as follows: (1) Depth interviews. In-depth interviews are the most important way to obtain data in this study. For in-depth interviews, a team of two professors and four master students visited Seeyon Company and its clients. A total of 16 interviews were conducted with relevant personnel for about 38 hours. The interviewees involved the CEO of Seeyon Company, Dean of Collaborative Research Institute, Formtalk Product Director, Marketing Consultant, Seeyon Company's Fengtuoke users and ordinary users. In order to ensure the adequacy of the interview evidence, the research team fully discussed the information obtained after the end of each interview and organized the recordings. Through several iterations, the integrity and pertinence of the collected data is guaranteed [18]. (2) Field investigation. The research team participated in the seminar between Seeyon Company and Fengtuoke actually, and felt the value creation process between the two sides.

The second-hand data mainly include the background information of Seeyon Company, internal related documents, news records and books. At the same time, the research team collected thematic materials and industry reports on Seeyon through a web database to verify the authenticity of first-hand data.

## IV. CASE ANALYSIS

The results of the data analysis reveal two conceptually different but intertwined processes: software product innovation, and the value co-creation that occurs during product innovation. The results has shown four synergistic activities between Seeyon, Fengtuoke and the ordinary users in value creation process: (1) platform tool support; (2) self-building system; (3) improvement, releasing and promotion; (4) using, maintenance and feedback. This is the whole life cycle of software product innovation, and it is also the process in which the three parties play their strengths, cooperate and create value together.

### A. The Stage of Platform Tool Support

1) *Process description*: Through the analysis of the data collected by different channels, this study found that in the “Fengtuoke” model of Seeyon Company, the product innovation process began with the platform tool support provided by Seeyon Company for Fengtuoke. This is also a clear distinction from traditional product innovation processes. Both Fengtuoke and Seeyon pointed out that when users built systems by themselves in combination with daily business operations, the content and methods that software companies provided to users became more important. The following references demonstrate the above points.

“A customer said that his company had some functional level requirements. If they could develop it themselves, they would do it in minutes, so they didn't have to go to the system developer. At this time, we could proudly say that Seeyon's Formtalk cloud platform can fully realize the zero code development of business applications.”(Seeyon Company)

2) *Value creation mechanism*: The value creation process under the “Fengtuoke” product innovation model is based on the support of platform tools. At this stage, Seeyon acts as a service provider while Fengtuoke user acts as a service recipient. The provider's support for the recipient contributes to the value creation process. The analysis of the data results shows that at this stage, the impact of Seeyon on the user value creation process mainly exists in the following aspects.

First of all, the properties of Seeyon's Formtalk cloud platform itself can provide natural support and convenience for Fengtuoke. Fengtuoke can use the components provided by Formtalk to develop application with no code to meet the needs of their own enterprises.

Secondly, in addition to the natural properties of the products, Seeyon also supports the independent development of Fengtuoke by the business activities. Seeyon's Formtalk product director said that since the cloud products went online, they have conducted free training for Fengtuoke and answered the problems encountered by Fengtuoke in real time.

The above analysis shows that in the platform tool support stage, Seeyon has played a key role throughout the

service process. As a system supplier, Seeyon has played the role of value process organizer in the value creation process [9]. For Fengtuoke, this stage is the process of learning Seeyon tool products and internalizing tool knowledge into organizational tacit knowledge. Therefore, Fengtuoke is the value recipient in the first stage of product innovation. At this stage, although the Fengtuoke user only accepts the value output of Seeyon, the value realization process does not stop at the end of the user's purchase. At the same time, how to help users create value is the starting point of Seeyon. Therefore, the service logic represented by the value creation at this stage is more similar to the service-dominant logic [11]-[19].

### *B. The Stage of Self-building System*

1) *Process description:* The data show that when Fengtuoke mastered the use of the construction tools provided by Seeyon basically, it could combine the business management needs of its own enterprises to build the business system independently. Consumers are the owners of manipulative resources. They put their knowledge, skills, experience and so on into the process of value creation, which is an important prerequisite for value creation [10]. As the main body of product innovation, Fengtuoke integrates its management experience and user wisdom into the management system, and realizes the explicitness of organizational tacit knowledge while producing an information system that adapts to the application of the industry.

"Users have the products they want, and now they know how to develop their own products, and our service satisfaction is even higher. It's a double-edged!" (Seeyon Company)

"We are an internet company with basic IT skills. Formtalk provides us with more designer and application design controls, supporting enterprise independent design applications." (Fengtuoke)

2) *Value creation mechanism:* The stage in which Fengtuoke conducts its own system is the user's self-organization process, which can be understood as the process of users providing services for them. The data show that although Seeyon does not participate in the process of user-building applications directly, it still indirectly supports the value creation process.

According to Seeyon, the most common problem that Fengtuoke has reflected in the process of building personalized applications is technical problems. In terms of technology, Seeyon communicates with Fengtuoke fully and gives support to Fengtuoke. Secondly, Seeyon has set up a special team consisting of consultants and technicians to support the entire process of building a personalized application.

Seeyon's "Fengtuoke" products innovation model forces participants to think about value in a new way. Fengtuoke is not only a consumer or a product acceptor, nor is it simply involved in the process of product innovation, design,

production, etc., but as a product developer to act as a value creator in value creation activities. In the process of value creation, Fengtuoke is not limited to the basic services provided by Seeyon, but combines other necessary resources and the skills they have to create value in the daily business practices of their own enterprises. Therefore, the value creation process at this stage follows the customer-dominant logic, in this case, is the user-dominant logic [14]. In addition, Seeyon Company has indirectly interacted with Fengtuoke in the process of creating value, increasing the potential of Fengtuoke to create value [20], which is a value promoter.

### *C. The Stage of Improvement, Releasing and Promotion*

1) *Process description:* The data show that the business application built by Fengtuoke is not limited to the use of its own enterprise. Fengtuoke can upload applications to the Formtalk sharing platform for other companies to purchase, or promote applications directly to their peers or customers through offline. In these ways, the value created by Fengtuoke is extended. Before the application is released to the Formtalk cloud platform, Fengtuoke needs to make appropriate modifications and improvements to the application according to the opinions of Seeyon Company. After the review, it can be displayed on the shared platform.

"Ordinary users go to our Formtalk cloud platform to purchase the application built by Fengtuoke. It is also out of trust for Seeyon. Therefore, we have established a set of evaluation standards to strictly control the application released by Fengtuoke." (Seeyon Company)

"The standard management system of environmental protection industry has always been in a blank due to the special industry characteristics. Therefore, promoting our management system to the peers is an opportunity to transport management concepts at a lower cost and become an industry leader quickly." (Fengtuoke)

2) *Value creation mechanism:* In the stage of improvement, releasing and promotion, it involves three parties: Seeyon Company, Fengtuoke users and ordinary customers. In this process, Fengtuoke is a specific service provider, the ordinary user is the service recipient, and the supplier is a supporter of the cloud platform.

According to the analysis of the case data, Seeyon Company's influence on the value creation process of Fengtuoke users is mainly reflected in the following aspects. First, in order to ensure the quality of the application uploaded by Fengtuoke, Seeyon has developed a standardized application evaluation process: application evaluation score table weights the application from four aspects: product, operation, design and quality. When the application of Fengtuoke's construction does not meet the evaluation requirements in some aspects, Seeyon provides detailed diagnostic instructions for Fengtuoke, and proposes relevant revision opinions for the reference of the Fengtuoke.

Secondly, after the application was launched, Seeyon used the platform traffic to support applications, for example,

providing advertising support and online joint activities for Fengtuoke. Thirdly, for the profit distribution problem, Seeyon divides the users into three levels according to the number of uploading application: Fengtuoke with the upload number 0-10 can obtain the profit of 70% of the user's payment price; if the upload number is 11-20, 75% can be obtained; if the number exceeds 20, 80% can be obtained.

Through the above analysis, it is shown that although the company has given suggestions in the product improvement stage and supported the promotion of the application of Fengtuoke, the entire improvement process is still completed by the Fengtuoke users. Moreover, the promotion method of Fengtuoke is not limited to the advertising space provided by Seeyon, but is promoted to its peers or its users through its own customer resources. Therefore, the value creation process at this stage follows the user-dominant logic, which is specifically dominated by the benchmark users of Fengtuoke.

In the evaluation process of Fengtuoke's application, Seeyon relies on its many years of experience in information implementation to propose the areas where Fengtuoke's applications are still not perfect, thus increasing the value of business applications. Therefore, Seeyon has played the role of a value amplifier in the evaluation phase.

Fengtuoke expresses its own understanding of the industry's business and operational experience in the form of business applications, and uses the information system as a carrier to transmit management wisdom and experience to customers or peers. At this time, the Fengtuoke is not only the product developer (value creator), but also further develops into a value provider: outline the business needs of the ordinary user and provide an alternative solution.

The business application built by Fengtuoke implies the business process and philosophy of the benchmark enterprises in the industry. Ordinary users introduce such systems as value recipients, which internalizes the hidden value in the system.

#### *D. The Stage of Using, Maintenance and Feedback*

*1) Process description:* The data show that after the ordinary users purchasing the application built by Fengtuoke, they can use the application to carry out the operation management of related business. Since the Seeyon Formtalk cloud platform is a special "PaaS+SaaS" product form, ordinary users use the form of renting for cloud products. The maintenance work for the product level is completed by Seeyon, and the maintenance work for the logic level is handled by Fengtuoke. If ordinary users encounter a series of problems during the use of business applications, they can provide feedback to Seeyon through online methods. Seeyon combined with user feedback to further improve the tool products.

"Our customers may not understand some of the business logic in the application. We explain them appropriately and they are easy to understand." (Fengtuoke)

"Some module names in Seeyon Business Generator are not so close to the corresponding sample images. For example, they use a picture of a notebook to indicate payroll management, which is ambiguous, and we reflect this problem to Seeyon." (Ordinary users)

*2) Value creation mechanism:* The stage of using, maintenance and feedback is a process for the ordinary user to absorb knowledge from the information system and apply it to day-to-day management practices. In this process, Fengtuoke users and Seeyon Company work together as a service provider to support the system use of ordinary users.

From the case data analysis, at this stage, Seeyon Company indirectly affected the process of user value creation. First of all, Seeyon launched the "Customer Service Consulting Linkage" service to jointly diagnose the problems of ordinary users with Fengtuoke. Secondly, Seeyon has set up a special feedback channel for the feedback of Fengtuoke users or ordinary users. The user satisfaction was investigated by telephone and mail.

In the interview, Fengtuoke listed some specific outputs in the product innovation process, such as the member management system. These need to be implemented or used by ordinary users in their own business conditions to achieve the expected benefits. In this process, ordinary users act as co-implementers and combine the specific environment of the enterprise to realize the operation of business applications. Fengtuoke helps ordinary users solve their problems in business applications, thereby maximizing the value of the system. In this process, Fengtuoke plays the role of supporters of value experience [9]. As the operator of the cloud platform, Seeyon provides basic services and supports the using and maintenance of products in the cloud platform. It is a value promoter in this process. Since the main purpose of ordinary users is to use the application built by Fengtuoke, and the daily business support and application maintenance of Fengtuoke and Seeyon are required. Ordinary users do not innovate independently from the resources provided by both parties. Therefore, the value creation at this stage follows the service-dominant logic.

#### V. CONCLUSION

Based on product-dominant logic, service-dominant logic and customer-dominant logic, the paper provides an in-depth analysis of the value creation process of users as software product providers and promoters. The paper summarizes the value co-creation mechanism model in software product innovation as shown in "Fig. 2".

The contribution of this paper is mainly manifested in three points: First, through the staged modeling of the product innovation model of "Fengtuoke", the four major stages of software product innovation were identified. This study defines this process as a product innovation life cycle for nonlinear iterations, and it is also a process of value co-creation.

Second, the paper reveals the value creation logic and the role of participants in each stage. Different from previous studies, this paper finds that the "Fengtuoke" product

innovation process does not follow a single way of thinking. The stage of platform tool support and using, maintenance feedback follows the service-dominant logic [19]. However, the stage of the self-building system and improvement, releasing and promotion follows the user-dominant logic [14]. In addition, due to the different service logic, the roles of participants in each stage are different. In particular, the role of the user as a value creator and a value provider complements the users' role under the user-dominant logic theory.

Third, the article summarizes the support mechanisms of the platforms at each stage and opens the black box of the value creation process between the Seeyon Company, benchmark customers and ordinary customers.

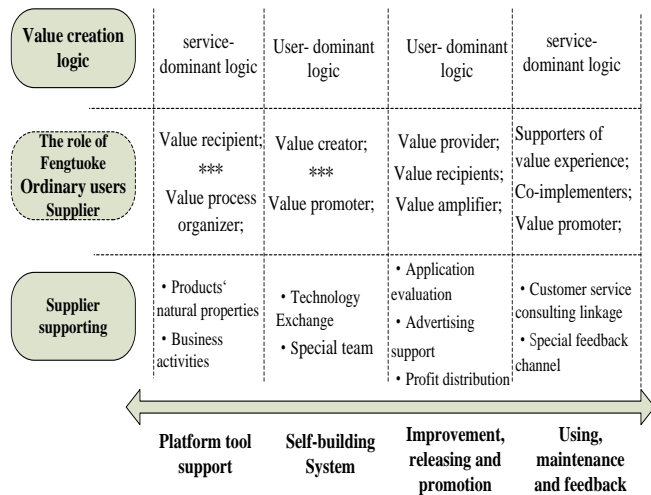


Fig. 2. Value co-creation mechanism model in software product innovation.

REFERENCES

[1] Huang Qiansheng. Software Innovation and Software Industry Competitiveness Research [J]. World Economic Situation, 2010(9): 66-71.

[2] Ye Di, Liu Zhenyu, Lin Dongqing. Research on Knowledge Co-Creativity between Users and Developers in Management Information System Development [J]. Chinese Journal of Management, 2014, 11(1): 101.

[3] Yang Xuecheng, Tu Ke. The Co-creation Mechanism of User Value in Travel Sharing — A Case Study Based on Uber [J]. Management World, 2017(8): 154-169.

[4] Jaakkola E , Hakanen T . Value co-creation in solution networks [J]. Industrial Marketing Management, 2013, 42(1):47-58.

[5] Tian Dan, Zhao Yang. From Service Innovation to Basic Software Innovation: A Study on the Growth Paradigm of Technological Capabilities of Chinese Software Enterprises [J]. China Soft Science, 2014 (5): 129-140.

[6] Jiang Baogang. Research on the implementation process of W company SAP project based on risk management [D]. Harbin Institute of Technology, 2016.

[7] Deshmukh PD, Thampi G T. Empirical analysis of factors influencing ERP implementation in Indian SMEs [C]// International Conference on Advances in Computing, Communications and Informatics. IEEE, 2014:2058-2062.

[8] Tuli K R , Kohli A K , Bharadwaj S G . Rethinking Customer Solutions: From Product Bundles to Relational Processes[J]. Journal of Marketing, 2007, 71(3):1-17.

[9] Aarikka-Stenroos L , Jaakkola E . Value co-creation in knowledge intensive business services: A dyadic perspective on the joint problem solving process[J]. Industrial Marketing Management, 2012, 41(1): 0-26.

[10] Wu Wenzhen, Chen Qijie. Analysis of the Formation Path of Value Co-creation Theory and Prospects for Future Research[J]. Foreign Economics and Management, 2012(6): 66-73.

[11] Vargo S L , Lusch R F . Evolving to a New Dominant Logic for Marketing[J]. Journal of Marketing, 2004, 68(1): 1-17.

[12] Vargo S L , Maglio P P , Akaka M A . On value and value co-creation: A service systems and service logic perspective[J]. European Management Journal, 2008, 26(3): 145-152.

[13] Grönroos C. Adopting a service logic for marketing[J]. Marketing Theory, 2006, 6(3):317-333.

[14] Heinonen K, Strandvik T, Mickelsson K, et al. A customer-dominant logic of service[J]. Journal of Service Management, 2013, 21(4):531-548.

[15] Heinonen K , Strandvik T . Customer-dominant logic: foundations and implications[J]. Journal of Services Marketing, 2015, 29(6/7).

[16] Li Yao. The Customer Creates Value by Customer-Driven Logic — An Empirical Study Based on Cognitive Interaction Perspective[J]. China Industrial Economy, 2014(1): 101-113.

[17] Jian Zhaoquan, Xiao Xiao. Service Innovation and Value Creation in Network Environment: Ctrip Case Study[J]. Journal of Industrial Engineering and Engineering Management, 2015, 29(1): 20-29.

[18] Pang Beibei, Gou Juanqiong, Mu Wenxin. Research on Ecological Contradiction and Its Governance Mechanism in the Transformation of Supply Chain Service — Taking Bohai Company as an Example[J]. Management Case Study and Review, 2018(1).

[19] Grönroos C. Service logic revisited: who creates value? And who co-creates?[J]. European Business Review, 2008, 20(4):298-314.

[20] Payne A F , Storbacka K , Frow P . Managing the co-creation of value[J]. Journal of the Academy of Marketing Science, 2008, 36(1):83-96.